

## **Ch 1 Biology Homework Questions**

*answers must be on a separate sheet of paper!*

1. Create 1 example of inductive reasoning and 1 example of deductive reasoning. (p7)
2. Create a diagram to define and compare revealed truth, theory, fallacy and truth by definition. (p11)
3. Make a flow chart that describes the scientific method. (p13)
4. What are the 2 groups in a controlled experiment. What is the difference between these 2 groups? (p13)?
5. Explain the difference between the dependent variable and an independent variable? (p13)
6. **Essay Question.** Design an experiment to determine how much water a plant needs.
7. What type of case is best investigated with a survey rather than an experiment? (p14)
8. List 6 limitations of science. (p15-20)
9. Explain workability. (p16)
10. Define bias. (p15)
11. Why can science not prove a universal statement? (p20)
12. Explain the difference between applied science and pure science. (p22)
13. List the 10 attributes of living things. (p26-28)
14. Make a chart comparing the light compound microscope and the electron microscope including the size, cost, magnification, preparation of specimen, substance reflected off of the specimen, viewing method, and whether or not the color of the specimen is revealed. (p29-32)
15. Contrast the scanning electron microscope and the transmission electron microscope. (p32)
16. Why do scientists make models? Give 1 example of a scientific model. (p36)

## Vocabulary Development

**Vocabulary is an important component of any science class. It is very useful to be able to break down larger words for understanding.**

Word.....definition	example
<i>auto</i> .....self	automatic, autoimmune
<i>bio</i> .....life	biosphere, biomes, biology bioengineering
<i>endo</i> .....within	endoskeleton, endocrine
<i>graph</i> .....to write	seismograph
<i>humor</i> .....liquid	aqueous humor, vitreous humor
<i>hypo</i> .....below	hypoglycemic, hypothermia
<i>meter</i> .....to measure	voltmeter
<i>micro</i> .....small	microbiology, microscope
<i>oculus</i> .....eye	ocular
<i>ology</i> .....study of	psychology, histology
<i>science</i> .....knowledge	pseudoscience,
<i>scopy</i> .....to view	microscope
<i>ultra</i> .....beyond	ultrasound
<i>thesis</i> ..... to place	synthesis
<i>vari</i> .....changeable	variable

## **Chapter 1 Objectives**

**For Chapter 1 Exam you should know about the following:  
These are your objectives for this chapter. Test will be on  
Tuesday, August 30<sup>th</sup>.**

1. List and be able to apply the steps of the Scientific Method.
2. List the contributions of Louis Pasteur.
3. Know the difference in revealed truth, unrevealed truth, theory, fallacy, and truth by definition.
4. List the contribution of Leeuwenhoek.
5. What did Francesco Redi do?
6. Label the parts of a microscope.
7. Describe how to tell the resolution of a microscope.
8. What are the attributes of life?
9. Describe the parts of an experiment: control, independent variable, dependent variable, and experimental group. Can you label those in an actual experiment?
10. What is the Doctrine of Humors and Doctrine of Signatures?
11. What is Spontaneous Generation?
12. Explain the difference between inductive and deductive reasoning.
13. Know the different types of microscopes, such as, Compound light, TEM and SEM.
14. Measurements and the metric system. We will discuss that later.